



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|------------------------|
| 10/538,753 | 06/10/2005 | Margit Hiller | 13486-00002-US | 1699 |
| 23416 7590 12/28/2007 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899 | | | EXAMINER ZIMMERMAN, JOSHUA D | |
| | | | ART UNIT 2854 | PAPER NUMBER |
| | | | MAIL DATE 12/28/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/538,753

Applicant(s)

HILLER ET AL.

Examiner

Joshua D. Zimmerman

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/10/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because the Drawing submitted is incorrectly labeled as "Figure 2." Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims

are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 21 has been renumbered 22.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaczun et al. (US 2004/0115562).

Regarding claim 20, Kaczun et al. disclose “a photopolymerizable flexographic printing element (title), at least comprising, arranged one on top of the other,

a dimensionally stable substrate (paragraph 39),

a photopolymerizable, relief-forming layer having a thickness of at least 0.3 mm (paragraph 44), at least comprising an elastomeric binder (paragraph 13), an ethylenically unsaturated monomer (paragraph 18) and a photoinitiator (paragraph 19),

and a protective element substantially transparent to actinic light (paragraph 47), wherein the protective element is a film which has been provided with a nontacky treatment or coating on the side facing the relief-forming layer and which is applied directly to the relief-forming layer, the adhesion between the protective element and the

relief-forming layer being adjusted so that the protective element can be peeled off the crosslinked relief-forming layer after exposure to actinic light through the protective element (paragraph 47), and wherein the actinic light is UV-A radiation having a wavelength of from about 320 to 400 nm and/or UV-A/VIS radiation having a wavelength of from about 320 to about 700 nm (paragraph 10)."

Regarding claim 21, Kaczun et al. further disclose "wherein the protective element comprises a nontacky coating (paragraph 47)."

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaczun et al. in view of McCaughey, Jr. et al. (US 5259311).

Regarding claim 12, Kaczun et al. teach "a process for the production of flexographic printing plates by means of laser engraving (title, abstract, paragraph 8), in which the starting material used is a photopolymerizable flexographic printing element (paragraph 8) at least comprising, arranged one on top of the other,

a dimensionally stable substrate (paragraph 39),

a photopolymerizable, relief-forming layer having a thickness of at least 0.3 mm (paragraph 44), at least comprising an elastomeric binder (paragraph 13), an

ethylenically unsaturated monomer (paragraph 18) and a photoinitiator (paragraph 19),
and

a protective element substantially transparent to actinic light (paragraph 47, PET is transparent),

wherein the process comprises--in this sequence--the following steps:

(a) crosslinking of the relief-forming layer in the total volume of the layer by exposure to actinic light (paragraph 10)

(b) removal of the protective element (paragraph 47) and

(c) engraving of a print relief into the crosslinked relief-forming layer with the aid of a laser emitting from 3 000 to 12 000 nm (paragraph 47), the height of the relief elements to be engraved with the laser being at least 0.03 mm (paragraph 44),

and the protective element is a film which has been provided with a nontacky treatment or coating on the side facing the relief-forming layer and which is applied directly to the relief-forming layer, the adhesion between the protective element and the relief-forming layer being adjusted so that the protective element can be peeled off the crosslinked, relief-forming layer after process step (a) (paragraph 47) and wherein the actinic light is UV-A radiation having a wavelength of from about 320 to 400 nm and/or UV-A/VIS radiation having a wavelength of from about 320 to about 700 nm (paragraph 10)."

Kaczun et al. further teach that the protective element is removed prior to laser engraving, but fail to specifically teach that the crosslinking is performed while the

protective element is still on the relief-forming layer, the crosslinking occurring by exposure of actinic light "through the protective element."

McCaughey, Jr. et al. teach curing a flexographic photopolymer layer through a protective element, subsequently removing the protective element, and then engraving a printing relief in the relief-forming layer (Figure 1) in order to achieve a high quality photopolymer flexographic printing plate (column 2, lines 21-24).

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to, in the method of Kaczun et al., in this sequence:

expose the relief-forming layer to actinic light through the protective element in order to crosslink the relief-forming layer,

remove the protective element, and

engrave a print relief,

in order to achieve a high quality photopolymer flexographic printing plate.

Regarding claim 13, Kaczun et al. further teach "wherein the protective element comprises a nontacky coating (paragraph 47)."

Regarding claim 15, Kaczun et al. further teach "additionally comprises a subsequent cleaning step (d) (paragraph 57)."

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaczun et al. in view of McCaughey, Jr. et al. (US 5259311), as applied to claim 13 above, further in view of Mengel et al. (US 2003/0211423).

Regarding claim 14, Kaczun et al. teach all that is claimed, including "the

elastomeric binder in the relief-forming layer is a thermoplastic elastomeric block copolymer of the styrene/butadiene type (paragraph 14)."

Kaczun et al. as modified fail to specifically mention that "the nontacky layer substantially comprises a polyamide."

However, Mengel et al. teach that release layers/non-tacky coatings are commonly made of polyamides (paragraph 33).

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to further modify Kaczun et al. in accordance with Mengel et al. such that the non-tacky coating of Kaczun et al. is made substantially of polyamide in order to have a suitable non-tacky coating.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaczun et al. as applied to claim 21 above, in view of Mengel et al. (US 2003/0211423).

Regarding claim 22, Kaczun et al. teach all that is claimed, including "the elastomeric binder in the relief-forming layer is a thermoplastic elastomeric block copolymer of the styrene/butadiene type (paragraph 14)." Kaczun et al. fail to specifically mention that "the nontacky layer substantially comprises a polyamide."

However, Mengel et al. teach that release layers/non-tacky coatings are commonly made of polyamides (paragraph 33).

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to make the non-tacky coating of Kaczun et al. substantially of

polyamide in order to have a suitable non-tacky coating, as taught by Megel et al.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaczun et al. in view of McCaughey, Jr. et al. (US 5259311), as applied to claim 12 above, further in view of Landsman (US 2003/0089261).

Regarding claim 16, Kaczun et al. as modified teach all that is claimed, except "wherein decomposition products formed in step (c) are sucked away." Landsman et al. teach using a vacuum to suck away ablated material from a printing plate (paragraph 65). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to suck away the ablated material in order to clean the printing plate.

10. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaczun et al. in view of McCaughey, Jr. et al. (US 5259311), as applied to claim 12 above, further in view of Telser et al. (US 2003/0136285).

Regarding claim 17, Kaczun et al. as modified teach all that is claimed, but fail to teach that "after the removal of the protective film (b), the crosslinked relief-forming layer is crosslinked in a subsequent process step (b') to a limited depth of penetration, viewed from the surface, beyond the extent of the crosslinking density produced by step (a)."

However, Telser et al. teach the exact method (paragraph 55) in order to prevent the appearance of melt borders (paragraph 13).

Therefore, at the time of the invention, it would have been obvious to one having

ordinary skill in the art to further modify the method of Kaczun et al. in accordance with Telser et al. in order to prevent the appearance of melt borders.

Regarding claim 18, Telser et al. further teach "wherein the depth of penetration to which additional crosslinking is effected in step (b') is from 5 to 200 μ m (paragraph 57)."

Regarding claim 19, Telser et al. further teach "wherein the surface crosslinking step (b') is carried out using UV light having a wavelength of from 200 to 300 nm (paragraph 62)."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/538,753
Art Unit: 2854

Page 10

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman
Examiner
Art Unit 2854

jdz


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER